ORIGINAL ARTICLE

POSITIVE ATTITUDE AND STRESS AMONG ADULTS WITH CORONARY HEART DISEASES IN FAISALABAD

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ABSTRACT

OBJECTIVES: Primary objective was to identify the relationship between stress and positive attitude among adults with coronary heart disease (CHD). Secondary objective was to predict stress from positive attitude in illness by controlling demographic characteristics (age, gender, and marital status) among adults with CHD.

METHODS: This was a cross-sectional survey research conducted during March-May 2017 in public hospitals of Faisalabad, Pakistan. Study sample was selected through purposive sampling technique. The sample size consisted of 278 (155 men, 123 women) CHD inpatients and out patients with age range from 18-80 years. Perceived Stress Scale Urdu 10 items (PSS-10) and Silver Lining Questionnaire (SLQ) Urdu version 38 were used to measure stress and positive attitude in illness respectively. SPSS 21 was used for statistical analysis.

RESULTS: A significant positive relationship exists between age and stress while a significant negative relationship exists between positivity and stress among adults with CHD. After controlling the demographic characteristics such as age, gender, and marital status, positive attitude in illness is significant predictor of stress among adults with CHD.

CONCLUSION: Adults with CHD have a high level of stress and low level of positive attitude. Stress and positive attitude are interlinked and statistically significant negative relationship among adults with CHD, further age; gender and marital status are significant predictors of stress among CHD adult patients.

KEY WORDS: Stress (Non-MeSH); Coronary Disease (MeSH); Adult (MeSH); Positive attitude (Non-MeSH).

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INTRODUCTION

Coronary Heart Disease (CHD) is the leading cause of death, about 50% of them attributable to cardiovascular ailments in the US, it accounts for 1 in 7 expiries in the US, killing above 360,000 individuals annually.[1] In United Kingdom CHD triggered 15% of all deaths in men and 7% in women during 2015.[2,3] It is alarming in modern decade that one in five middle-aged individuals in metropolitan Pakistan may have primary CHD and women are at greater risk than men.[4] On average 50% risk rises for CHD among adults when they face stress i.e. predominantly a physical reaction.[5] Long-lasting stress predicts the manifestation of CHD.[6] Adults who face stress are at increased risk to experience CHD than normal population. The existing evidence suggests that all stressors like work stress, social isolation, loneliness play a role in the long term etiology of CHD and the effects may be mediated in part by metabolic dysfunction. So the long term stress has been related to excess risk of developing CHD.[7] On the other side core subclinical CHD might increase the likelihood of participants experiencing stress.[8] Stress mediates the relationship between positive psychological capacities and good health.[9] There are many predictors of stress given in literature like CHD, smoking and obesity may have a role in a development of long lasting psychological stress from middle life to old age.[10] Positive attitude in illness is the magnitude to which individuals believe their sickness has a positive advantage not withstanding the negative costs of being ill.[11] Positive attitude was not linked to duration of diagnosis with different health problems such as asthma, chronic respiratory disease, lung cancer, sleep apnea syndrome, tuberculosis and other life-threatening diseases.[12] However data directly addressing positivity and CHD is missing from the existing literature yet the myocardial infarction patients can perceive improvement in life condition after the diagnosis.[13] Positive attitude increased after rehabilitation for cardiac patients tempting that rehabilitation leads to an increase in perceived positive consequences of illness.[14] Form the population base study , it is found that positive effect or positivity was independently associated with the risk of CHD, increasing the positive effect would decrease the risk for CHD.[15] It is also found from local literature there is a association between psychological stress and high risk of CHD.[16] It says that stress, positive attitude and CHD are interlinked phenomenon.[17]

METHODS

This was a cross-sectional survey research conducted during March-May 2017 in Public Hospitals of Faisalabad (Department of Cardiology, Allied Hospital & Faisalabad Institute of Cardiology) Pakistan. Through purposive sampling technique total sample of 278 (155 men, 123 women) diagnosed CHD inpatients and outpatients selected with mean age 41.53±14.53 while age ranged from 18-80 years. This age group was selected because the Heart Disease and Stroke Statistics 2016 update of the American Heart Association (AHA) had reported that about 16 million persons

TABLE I: FREQUENCIES AND PERCENTAGE OF DEMOGRAPHIC CHARACTERISTICS OF STUDY SAMPLE (n=278)

Variable		Frequency	Percentage
Age group	Early adults (18-40 years)	139	50
	Late adults (41-69 years)	139	50
Gender	Male	155	56
	Female	123	44
Marital status	Married	210	76
	Unmarried	68	24

above 20 years old in the United States of America have CHD.[14] Sample size was calculated using G power software. Post hoc power analysis run for F-test with input parameters with α=0.05, effect size f^2=0.15, total sample size= 278, and number of predictors=4. Based on the above-mentioned assumptions, the preferred sample size had a statistical power of 0.99 with non-centrality parameter=41.70, & critical F=2.41. Literate diagnosed patients with CHD were selected while illiterate and patients with other diagnosis were excluded.

Perceived Stress Scale Urdu 10 items (PSS-10) translated by Mariam A, et al.[18] was used to measure stress.[19] It was a five point rating scale with scoring categories of 0=not at all and 4=frequently. Score may range from 0-40 in PSS-10 Urdu. Silver Lining Questionnaire (SLQ) 38 items originally developed by Sodergren and Hyland[20] and translated by the researchers in Urdu, was used to measure positive attitude in illness among adults with CHD. A demographic sheet was used to identify age, gender, marital status. Scoring method for SLQ-Urdu was same as in english version i.e. responses on agree and completely agree would score as "1", while responses on undecided, disagree and completely disagree would score as "0", so score could range between 0-38. On PSS-10 a high score indicates high level of stress and on SQL-38 a high score indicates high score of positive attitudes about illness. In order to collect data ethical considerations were top priority. A provisional letter was presented to hospital authorities before approaching the patients. After the approval from concerned authorities, consent was obtained from patients then they were presented PSS-10, SLQ-38 and a demographic sheet in Urdu.

SPSS 21 was used for data analysis. Descriptive statistics was used to obtain frequencies and percentages of demographic characteristics of study sample. Pearson product moment correlation was used to find out the existing relationship between variables at $p<0.01$ and level of positivity and stress. Linear regression was used to predict the relationship among variables at $p<0.01$.

RESULTS

Out of 278 study subjects 155 were males and 210 were married (Table I). Table II gives a brief overview regarding level of and relationship between age, marital, stress and positive attitude. Stress and positive attitude in illness had significant negative relationship at α=0.05 level of significance. Age and stress were positively significantly linked at α=0.01. Results in hierarchal regression analysis are tabulated in Table III. It indicates that gender, age, marital status and positive attitude are unique predictors of stress among adults with coronary heart diseases with result of positivity.

DISCUSSION

Stress plays an inverse role with CHD that can cause CHD[6] or individuals can face stress due to CHD.[8] Stress is predicted as a psychosocial risk factor of CHD.[21] Findings of current study indicates that age is positively linked with stress that may be due to illness factor i.e. CHD. Yet the most recent study claimed that perceived stress was negatively associated with age in men who smoke, relatively to general population.[22] This study determined a negative relationship between positive attitude and stress because stress is a state of relatively sudden uncomforting, or stress is a connection between the individual and the atmosphere that is evaluated as personally important but positivity is a state of alternative pole that develops with comforting situations, due to their opposite nature, they have a negative relationship.[23] Direct link between stress and positivity is not addressed in existing literature, however, study claimed that stress mediates the relationship between positive psychological capacities and psychological wellness.[13] This study further concluded that patients with CHD had low level of positivity. If the mean score considered on a fifty percent margin on each scale then these adults face stress about 60% and positivity in illness less than 50% of the total score. Diagnosis of CHD itself creates a critical condition for the patient such as it becomes a source of an upturn in expenses in form of treatment, stigmatization and sensitive remarks from others. This medical condition not only affects the person but also his occupational environment as evident by a study stating that CHD and mental ill health together illustrate a serious cost for productive-ness together in human and financial expressions.[24] Due to multiple undesirable factors person may loses hope and be unable to enjoy positivity he received from others in form of sympathy. This may be a significant cause of low score on positivity among CHD patients. A previous study on individuals with multiple sclerosis stated that gender and age were distinct from adversarial progress in illness yet it was linked with positivity.[25] Another study stated that older age, inducible ischemia on stress echocardiography and smoking were independent predictors of cardiac mortality.[26] According to this study patients with CHD have relatively high level of stress, alongside age; gender, marital status and positivity are significant predictors of stress among CHD adult patients. Previous studies supported

TABLE II: MEAN, STANDARD DEVIATION AND RELATIONSHIP BETWEEN STUDY VARIABLES (n=278)

Variable	Age	Positivity	Stress	Mean ± SD (%)
Age	1	-.06	.17**	41.53 ± 14.53
Positivity		1	-.14*	17.40 ± 7.10 (46)
Stress			1	23.41 ± 5.76 (59)

**$p<0.001$, *$p<0.01$

TABLE III: HIERARCHICAL REGRESSION ANALYSIS TO PREDICT STRESS FROM DEMOGRAPHIC VARIABLES AND POSITIVITY

Predictors	ΔR^2	β
Step 1	.03*	
Control variables		
Step 2	.02*	
Positivity		-.13*
Total R^2	.047	

*$p < 0.01$, Note. Control variables included age, gender, and marital status

these findings as CHD may have a role in the development of long-lasting psychological distress from midlife to old age.[10] If the mean score is considered on a fifty percent margin on each scale then these adults face stress about 60% and positivity in illness less than 50% of the total score. While summing up it is necessary to pay attention on psychological factors, as independent risk factors for CHD.[27] In Pakistani population physical activity or exercise is suggested for CHD patients to release stress and avoid mortality as physical inactivity had significant contribution to the excess CHD mortality in the South Asian inhabitants of UK.[28] Data addressing positivity in CHD in Pakistani reference is missing in literature. This study may contribute a significant piece of knowledge in local context. It is suggested that to increase the generalizability of findings future research may focus regions across country as well instead of considering one locality.

Limitations of this study include its focus on a specific region and specific institutions only. Private institutes and other cardiac problems can also be addressed. Socio-economic status, education and living style may be considered in future research.

CONCLUSION

This study concluded that age of CHD patients was positively linked with stress. CHD patients are facing high level of stress and low level of positivity in illness. Further stress and positivity are interlinked among adults with CHD and study findings claimed that age; gender, marital status and positivity are significant predictors of stress among CHD adult patients.

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AUTHORS' CONTRIBUTIONS

Following authors have made substantial contributions to the manuscript as under:

SMIHZ: Concept & study design, analysis & interpretation of data, critical review, final approval of the version to be published.

NY & SH: Acquisition of data, drafting the manuscript, final approval of the version to be published.

AN: Analysis & interpretation of data, critical review, final approval of the version to be published.

NG: Acquisition of data, final approval of the version to be published.

Authors agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

CONFLICT OF INTEREST

Authors declared no conflict of interest

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